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Effectiveness of tDCS on Dysmenorrhoea: A Systematic Review

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ABSTRACT

Dysmenorrhoea, or menstrual cramps, involves chronic pelvic pain, with Primary Dysmenorrhoea (PDM) being common. Symptoms like abdominal pain, back pain, nausea, fatigue, and diarrhoea occur with menstruation, lasting 8–72 hours, and affect physical health, mood, relationships, and work. Prevalence ranges from 34% to 94%, and long-term PDM may alter brain metabolism and pain pathways. Transcranial Direct Current Stimulation (tDCS), effective in chronic pain conditions, shows potential for relieving PDM pain and enhancing quality of life. To evaluate the effectiveness of tDCS in alleviating pain associated with dysmenorrhea. A systematic review of Randomised Controlled Trials (RCTs) was conducted using databases such as PubMed, Scopus, and Cochrane Library. Studies comparing tDCS with sham stimulation or standard care for dysmenorrhea were included. A total of 112 participants were included. The primary outcome measures were pain evaluated by numeric rating scale and McGill Questionnaire score. Secondary outcomes measures were responses to the Positive and Negative Affect Schedule, Hamilton Anxiety Scale. Baseline data were performed during the first menstrual cycle, and during the second menstrual cycle, participants were conducted to tDCS treatment, and postintervention data were collected. All the collected RCTs demonstrate that tDCS applied over motor and prefrontal cortices significantly reduced pain intensity and improved functional outcomes in women with dysmenorrhea. The effects were sustained with multiple sessions, and minimal adverse effects were reported. The tDCS is a promising non-pharmacological intervention for managing dysmenorrhea.Further large-scale RCTs are needed to confirm its efficacy and optimise stimulation parameters.

Keywords: Hamilton Anxiety Scale, Menstrual flow, Nausea, Primary dysmenorrhoea.